

Remote Sensing Applications Division (RSAD)

CDR Program Office

Weekly Report for May 6, 2011 John J Bates, Chief



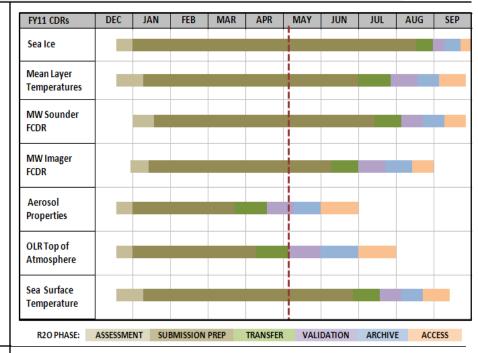
CDR Program Office

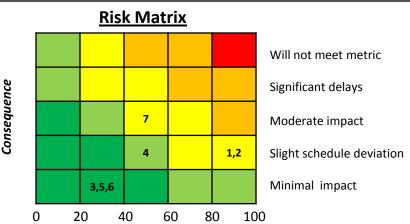
FY11 Climate Data Records

Weekly Report - May 6, 2011

- 1 Sea Ice
 - NSIDC code developers working on extracting daily ice module
- 2 Mean Layer Temperatures
 - PI is reluctant to say when he will work on documentation
- 3 Microwave (MW) Sounder FCDR
 - PI plans to send initial delivery (Ch 9) by mid May
- 4 Microwave (MW) Imager FCDR
 - POC progressing with documentation
- S Aerosol Properties
 - Subsetting CDR and converting to NetCDF
- 6 Outgoing Longwave (LW) Top of Atmosphere
 - Received final code delivery close to an FOC CDR
- **7** Sea Surface Temperature
 - NetCDF conversion in progress at NODC

Probability of occurrence





Risk and Mitigation

Sea Ice

• Recoding needed on data/algorithms – schedule is at FY11 limit

Mean Layer Temps

• PI is exceedingly busy – may need nudging from CDRP Office

Sea Surface Temp

• Documentation delivery schedule TBD - CICS consultant hire in progress

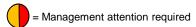
Borg Servers

• Potential CDR delays if servers remain degraded – other options available

PREDECISIONAL DRAFT INFORMATION







Sea Ice

CDR Product: TCDR - Sea ice concentration/extent/area estimates, 1979-2010 (20 GB)

GEOSS Societal Benefit: Climate, Water, Ecosystems, Agriculture

Project Status

- Updated Schedule
- NSIDC code developers are working on pulling out the daily ice module that will read swath data, regrid, and feed algorithms
 CDRP understands there is a schedule risk, but its necessary to maintain transparency and reproducibility of the CDR
- · Sent Draft SA to the PI
- Sent CATBD Template to PI

Next Action / Milestone

• PI to send POC sample doc and code



- If Monthly product is wanted, we may not make FY11 date
 - Although mo product is just the average of the daily values
- NSIDC will be serving the data to the public, PI concerned about long term support
- The codes that will be delivered are modular pieces of a much larger code and will require effort to separate and document

ID	Task Name	Status	Start	Ston		FY11 Q1			FY11 Q2			FY11 Q3			FY11 Q4	
טו	Task Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	12/7/2010	1/7/2011												
2	Transfer Prep	40	1/7/2011	8/15/2011												
2a	Comment Source Code	50	4/15/2011	8/15/2011												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	50	1/7/2011	8/15/2011												
2c	Convert data from binary to NetCDF	0	3/1/2011	8/15/2011												
3	Tranfer Code, Docs, and Data	0	7/15/2011	8/31/2011												
4	Validate Code, Docs, and Data	0	7/31/2011	9/7/2011												
5	Archive Code, Docs, and Data	0	8/15/2011	9/21/2011												
6	Provide Access to Code, Docs, and Data	0	9/1/2011	9/30/2011												

Mean Layer Temperatures

CDR Product: TCDR - Monthly gridded anomalies for three layers (LT, MT, LS), 1978-2010 (60 GB)

GEOSS Societal Benefit: Energy, Climate, Ecosystems

Project Status

- No Change
- Mike Urzen is working on NetCDF conversion
- PI says he's very busy and will get to the documentation as time permits (possibly June)
 - POC sees his lack of commitment as a Red Flag
 - May need CDRP office to make a phone call
- Working on SA
- Sent CATBD template to PI

Next Action / Milestone

- Work on NetCDF conversion
- PI needs to work on source code and documentation



- Data is ASCII format Mike Urzen will convert to NetCDF
- PI has limited resources available to work on code clean up, comments and documentation – need to monitor progress

ID	Task Name	Status	Start	Ston		FY11 Q2			FY11 Q3			FY11 Q4	
טו	Task Name	Status	Start	Stop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	1/1/2011	1/15/2011									
2	Transfer Prep	20	1/15/2011	6/30/2011									
2a	Comment Source Code	50	1/15/2011	5/15/2011									
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	20	3/15/2011	6/15/2011									
2c	Convert from ASCII to NetCDF	10	4/30/2011	6/30/2011									
3	Tranfer Code, Docs, and Data	0	6/21/2011	7/21/2011									
4	Validate Code, Docs, and Data	0	7/15/2011	8/15/2011									
5	Archive Code, Docs, and Data	0	8/7/2011	9/7/2011									
6	Provide Access to Code, Docs, and Data	0	9/1/2011	9/30/2011									

Microwave Sounder FCDR

CDR Product: FCDR - AMSU-A Brightness Temperature, CH 7 & 9; 2001 - 2010 (100 GB)

GEOSS Societal Benefit: Climate, Water, Ecosystems

Project Status

- Need place on ftp for test data delivery
- Met with Phil to discuss SA progress
 - will add the GPS intercalibrated orbit files to the SA
- PI will send initial CH9 delivery in mid May
- Started work on SA Anand is helping
- PI will convert data to NetCDF

Next Action / Milestone

• Expect all CH9 by end of May, and CH7 in July



- PI concerned about his source code being widely available
 - PI would like to be the one to distribute it
 - Need CDRP managers to develop policy letter

ID	Task Name	Status	Start	Ston		FY11 Q2			FY11 Q3			FY11 Q4	
IU	Task Name	Status	Start	Stop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	1/1/2011	1/15/2011									
2	Transfer Prep	50	1/15/2011	7/30/2011									
2a	Comment Source Code	50	1/15/2011	4/15/2011									
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	50	3/15/2011	5/30/2011									
2c	Format Data for delivery	50	4/30/2011	7/30/2011									
3	Tranfer Code, Docs, and Data	0	6/1/2011	6/30/2011									
4	Validate Code, Docs, and Data	0	7/1/2011	7/30/2011									
5	Archive Code, Docs, and Data	0	8/1/2011	8/30/2011									
6	Provide Access to Code, Docs, and Data	0	9/1/2011	9/30/2011									
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Microwave Imager FCDR

CDR Product: FCDR - Intercalibrated SSM/I Brightness Temperatures (v6), 1987 – 2010 (1720 GB)

GEOSS Societal Benefit: Climate, Water, Ecosystems

Project Status

- POC drafted submission agreement waiting on Word version with comments from Archive Branch
- POC is making progress on CATBD
- Completed source code comments and created source code header document with robodoc
- Completed NetCDF conversion, just need to tweak some metadata after receiving further guidance from archive branch

Next Action / Milestone

Work on ATBD and remaining documentation



- PI will not assist making the data an operational CDR
- POC will be responsible for converting data to NetCDF, documentation, and commenting the code.

ID	Task Name	Status	Ctart	Cton		FY11 Q1			FY11 Q2			FY11 Q3			FY11 Q4	
ID	l dSK Ndffle	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	1/1/2011	1/15/2011												
2	Transfer Prep	20	1/1/2011	5/31/2011												
2a	Comment Source Code	100	1/1/2011	3/31/2011												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	25	1/1/2011	5/31/2011												
2c	Format data from binary to NetCDF	90	2/1/2011	4/30/2011												
3	Tranfer Code, Docs, and Data	25	5/21/2011	6/21/2011												
4	Validate Code, Docs, and Data	25	6/15/2011	7/15/2011												
5	Archive Code, Docs, and Data	20	7/8/2011	8/8/2011												
6	Provide Access to Code, Docs, and Data	0	8/1/2011	8/31/2011												
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Aerosol Properties

CDR Product: TCDR - Aerosol Optical Thickness (AOT), 1981 – 2010 (430 GB)

GEOSS Societal Benefit: Disasters, Health, Climate, Ecosystems

Project Status

No Changes

- Ops branch has converted a test file to NetCDF Ethan is working with Phil/Tom to finalize metadata, will take less than a day to convert
- · Finalizing submission agreement
 - Coordinating with archive branch on naming conventions

Next Action / Milestone

• Complete netCDF conversion



Project Risks

RSAD POC: Zhao

Minimal

ID	Task Name	Ctatus	Ctort	Cton		FY11 Q1	l		FY11 Q2			FY11 Q3			FY11 Q4	
IU	TASK NATTIE	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	11/29/10	12/15/10												
2	Transfer Prep	60	1/1/2011	4/21/2011												
2a	Comment Source Code	100	1/1/2011	1/30/2011												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	75	1/1/2011	4/21/2011												
2c	Subset CDR variables	100	2/1/2011	4/21/2011												
2d	Format data from HDF to NetCDF	80	2/15/2011	4/21/2011												
3	Tranfer Code, Docs, and Data	50	3/21/2011	4/30/2011												
4	Validate Code, Docs, and Data	50	4/15/2011	5/15/2011												
5	Archive Code, Docs, and Data	0	5/8/2011	6/8/2011												
6	Provide Access to Code, Docs, and Data	0	6/1/2011	6/30/2011												

Outgoing Longwave Radiation - Top of Atmosphere

CDR Product: FCDR - HIRS OLR Time Series, monthly mean, 2.5 deg, 1979 – 2010 (CDR: 20 MB, Orbit Files: 700 GB)

GEOSS Societal Benefit: Energy, Climate, Ecosystems

Project Status

- Phil is reviewing the SA
- PI confirmed the file we reproduced matched his original file
- This CDR is close to the FOC level
 - code has passed security review
 - it's running on NCDC blade server
 - all input data comes from CLASS
 - we have reproduced PI's test data set
 - Note: FOC documentation and maturity requirements are still TBD
 - Caution: Should not be a benchmark for gauging FOC conversion effort
- Received final source code PI replaced IDL with Fortran

Next Action / Milestone

- Complete submission agreement process
- Verify documentation
- Verify NetCDF files



Project Risks

Minimal risk involved

ID	Task Name	Status	Start	Ston		FY11 Q1			FY11 Q2			FY11 Q3			FY11 Q4	
IU	l ask Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	11/29/2010	12/15/2010												
2	Transfer Prep	85	12/15/2011	4/30/2011												
2a	Comment Source Code	100	12/15/2011	3/31/2011												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	75	1/1/2011	4/30/2011												
2c	Format data for delivery	75	3/1/2011	4/30/2011												
3	Tranfer Code, Docs, and Data	50	4/1/2011	5/7/2011												
4	Validate Code, Docs, and Data	50	5/1/2011	6/7/2011												
5	Archive Code, Docs, and Data	0	6/1/2011	7/7/2011												
6	Provide Access to Code, Docs, and Data	0	7/1/2011	7/31/2011												

Sea Surface Temperature

CDR Product: TCDR - Pathfinder v5.2, Daily nighttime and daytime global SST fields, 1981-2010, (4000 GB) **GEOSS Societal Benefit:** Climate, Water, Ecosystems, Agriculture

Project Status

- All reprocessing complete HDF sent to NODC for netCDF conv

 conversion in progress, sample files are available on their
 website for review
- · Working on SA
- Documentation hire with CICS, official start date will be 1 July
 - Documentation delivery schedule TBD

Next Actions / Milestone

NetCDF Conversion at NODC



- Processing from level 1b to HDF has been accomplished for all sats - some small gaps exist
- Documentation is via CICS consultant formal hire in progress
- Final SST data set will be maintained at NODC

ID	Task Name	Status	Ctort	C+on		FY11 Q1			FY11 C)2		FY11 Q3			FY11 Q4	
טו	Task Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	11/29/10	12/15/10												
2	Create HDF product (v5.2) 1981-2010 (UoM)	90	12/15/10	4/7/11				N18	N16	N7 N9 I	N11 N14	ļ				
3	Convert HDF to netCDF (NODC)	25	2/1/11	4/30/11												
4	Comment Source Code	5	2/15/11	6/30/11						NODC		CICS H	ire			
5	Create Documents	5	2/15/11	6/30/11						NODC		CICS H	ire			
6	Tranfer Copy of Data, Code and Docs	5	5/1/11	7/15/11								Data		C&D		
7	Validate Data, Code and Docs	5	6/1/11	7/31/11									Data	C&D		
8	Archive Data, Code and Docs	0	7/1/11	8/15/11										Data	C&D	
9	Provide Access to Data, Code and Docs	0	8/15/11	9/15/11												
	(Point to Data served at NODC)															

BACKUP CDR -- ISCCP D1

CDR Product: TCDR - Mean Cloud Amount, 2.5 deg res, 3 hourly, 1983-2008, (1.4 GB)

GEOSS Societal Benefit: Energy, Climate, Water, Agriculture

Project Status

- No Change
- ISCCP is a backup CDR to ensure the NCDC performance metric is successfully met.
- Initial Assessment Data and source code are very mature (could easily fill the gap if any of the FY11 CDRs fail to deliver)
- Product is already being archived

Next Action / Milestone

 No effort - unless it looks like one of the other CDRs may fail, then primary work will be on documentation



Project Risks

Minimal

ID	Task Name	Status	Start	Stop		FY11 Q1			FY11 Q2			FY11 Q3			FY11 Q4	
ID	Task Natile	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	Complete	11/29/10	12/15/10												
2	Transfer Prep		12/15/2011	2/28/2011												
2a	Comment Source Code		12/15/2011	1/30/2011												
2b	Create Documents		1/1/2011	2/28/2011			M									
2c	Format data for delivery		3/1/2011	3/31/2011	-1		13									
3	Tranfer Code, Docs, and Data		4/1/2011	4/ 0/20												
4	Validate Code, Docs, and Data		5/1/2	17/2001												
5	Archive Code, Docs, and Data		6/1/201	6/30/2011												
6	Provide Access to Code, Docs, and Data		7/1/2011	7/31/2011												

FUTURE CDR -- Global Surface Albedo

CDR Product: TCDR – GOES coverage Surface Albedo, 10 day blocks, 4 km res, 2000-2003 (initially), (XX GB)

GEOSS Societal Benefit: Climate, Ecosystems, Agriculture

Project Status

- EUMETSAT contact has been pulled to other tasks until mid May
 Slips the plan to process GOES test set to the end of July
- Initial Assessment revealed it would not meet CDR IOC requirements by FY11, but the High Visibility of this project will ensure that work continues to progress as quickly as possible

Next Action / Milestone

Stage GOES test data



Project Risks

 Requires extensive coordination with EUMETSAT for code, documentation and validation

ID	Task Name	Ctatus	Ctout	Cton		FY11 Q1			FY11 Q2			FY11 Q3			FY11 Q4	
טו	Task Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment		11/29/10	12/15/10												
2	Stage 4 yrs of GOES data		12/15/10	1/14/11												
3	Write GOES preprocessing sw		12/8/10	1/7/11												
4	Write Model Ozone/H2Ov ingest		1/7/11	2/6/11												
5	Generate GOES-12 LUT		1/1/11	1/31/11												
6	Format Data for archive (NetCDF4)		1/1/11	3/2/11												
7	Receive/test AREA ingestor		3/3/11	10,1												
8	Processing - 4 year POR		5/1	(30/												
9	Tranfer Remaining Docs		6/22 1	7/1/11		1/1/										
10	Validate Code, Docs, and Data		7/8/11	7/15/11												
11	Archive Code, Docs, and Data		7/16/11	8/7/11												
12	Provide Access to Code, Docs, and Data		8/8/11	8/18/11												

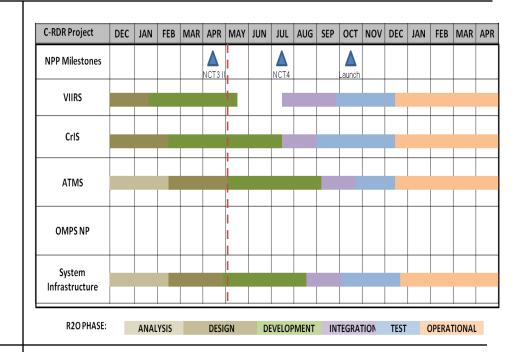


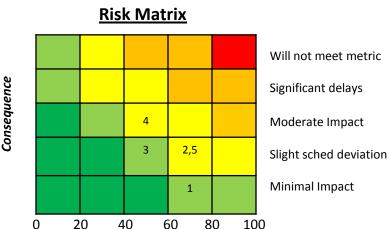
CDR Program Office

NPP/JPSS Climate Raw Data Records (C-RDRs) Project

Weekly Report - May 06, 2011

- 1 VIIRS
 - Developing code to write the VIIRS C-RDR.
- 2 CrIS
- Developing code to write the CrIS C-RDR
- Latest CrIS IDPS software not available to contractors (Cal/Val teams, NASA SDS, ADL are also affected)
- 3 ATMS
 - Defining the C-RDR format, contents, and metadata
- 4 OMPS NP
 - Postponed to focus resources on system infrastructure
- **5** System Infrastructure
 - Developing a system throughput test using the CLASS RDR aggregation data
 - Setting up configuration and software for the Blade Server





: On-track

Probability of occurrence

Risk and Mitigation

VIIRS, CrIS, ATMS, OMPS NP, System Infrastructure -

- Short schedule to NPP launch on October 2011. Hiring additional software developers on hold. Need to re-adjust the schedule.
- Operational software is under maintenance, updated versions may affect C-RDR ported version. Working with old (2007) version of CrIS code.

System Infrastructure -

- •Availability of automated receipt of NPP RDRs from the CLASS system. Need to test ingest of RDRs from CLASS and develop an automated mechanism for re-requesting data.
- Capability of CLASS to ingest and archive C-RDRs.

= Potential management action required



Visible Infrared Imaging Radiometer Suite (VIIRS)

C-RDR Product: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format **GEOSS Societal Benefit**: Climate, Water, Ecosystems, Agriculture, Biodiversity, Energy

Project Status

- Completing release of netCDF4 file creation toolset.
- Developed and demonstrated toolset to define and initialize netCDF4 files.
- Developing software to create the VIIRS C-RDR, reusing ADL software.
- ADL modified to process aggregated RDRs
- Evaluating ADL for processing granule aggregations
- Evaluating IDPS latest release changes in Algorithm Development Library (ADL) baseline
- Defining the C-RDR format, data, and metadata
- Ported operational algorithms from NASA Land PEATE

Next Action / Milestone

• Development complete for the VIIRS C-RDR



Project Risks

- NPP Launch Date: October 25, 2011
- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version



Cross-track Infrared Sounder (CrIS)

C-RDR Product: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format **GEOSS Societal Benefit**: Climate, Water, Energy

Project Status

- Developing and debugging code to create data structures for writing the C-RDR.
- Creating a MATLAB reader for the C-RDR to provide easy access to C-RDR
- Evaluating processing of C-RDR with MATLAB and IDL
- Defining the netCDF4 structure for the C-RDR and developing software for writing the C-RDR
- CrIS IDPS software changes are not available to contractors. This
 affects C-RDR and ADL development and Cal/Val teams, NASA
 SDS.
- Ported operational algorithms (Space Dynamics Lab at Utah State)

Next Action / Milestone

Complete definition of CrIS C-RDR



Project Risks

- CrIS science algorithms not available to contractors: SSEC (ADL developer) plans to sign NDA with BOMEM. Cal/Val request for NDA was denied. We will track this effort to see if successful. Our current version of CrIS code is from 2007.
- NPP Launch Date: October 25, 2011
- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version. Mitigated by using ADL.

ID	Task Name	Status	Ctort	Cton		FY11 Q1			FY11 Q2			FY11 Q3			FY11 Q4	
טו	Task Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Analysis	Completed	8/16/2010	11/24/2010												
2	Design	90.00%	11/26/2010	2/15/2011												
3	Development		2/16/2011	7/22/2011												
3a	Develop CrIS processing component	50.00%	2/16/2011	5/11/2011												
3b	Test CrIS processing component		5/12/2011	7/22/2011												
4	Integration		7/25/2011	8/19/2011												
5	Test		9/1/2011	12/19/2011												
5a	Dry Runs/some with launch data		9/1/2011	12/12/2011												
5b	System Acceptance Test		12/12/2011	12/19/2011												
6	Operational		12/20/2011													

Advanced Technology Microwave Sounder (ATMS)

C-RDR Product: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format **GEOSS Societal Benefit**: Climate, Water, Energy

Project Status

- Designing code to write the C-RDR.
- · Completed first draft of C-RDR contents.
- · Defining the C-RDR format, contents, and metadata
- Identifying code and data structures required for C-RDR processing.
- · Verified processing of ATMS algorithms
- IDPS ATMS algorithm executing in ADL at NCDC
- Evaluating IDPS algorithms in ADL
- Working to get the ported IDPS software running at NCDC
- Obtained ported operational algorithms (Space Dynamics Lab at Utah State)

Next Action / Milestone

· Define the C-RDR data and metadata



Project Risks

- NPP Launch Date: October 25, 2011
- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version
- Developer shares time working NPP and CLASS issues.



Ozone Mapping Profile Suite (OMPS) Nadir Profiler (NP)

C-RDR Product: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format **GEOSS Societal Benefit**: Climate, Energy

Project Status

 Delayed OMPS NP development to focus resources on system infrastructure and other sensors

Postponed

Next Action / Milestone

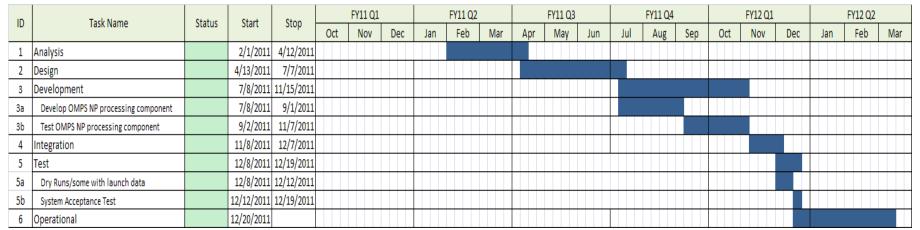
· Obtain IDPS software when the OMPS modifications stabilize



Project Risks

- OMPS NP C-RDRs will not be available at launch. Mitigation: hire another developer for OMPS NP.
- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version

Project Schedule



5/6/2011 16 POC: Saunders

C-RDR System Infrastructure

C-RDR Product: Infrastructure to automate the production of the C-RDRs.

GEOSS Societal Benefit: None

Project Status

- Developing driver script for the throughput test.
- Creating database tables and access procedures for the database to handle configuration files.
- Setting up configuration files and software for the ingest test.
- Developing an ingest test using the aggregated RDRs received from CLASS.
- Working with RSAD projects to define process to transfer data to and from CLASS
- · Working on database infrastructure design.
- Analyzing existing ingest and dissemination capabilities.
- Completed the Archive Recommendation Package for C-RDRs.

Next Action / Milestone

- Need to rework schedule for one FTE, not two.
- Complete design of system infrastructure.



Project Risks

- NPP Launch Date: October 25, 2011
- Need to hire additional software developer to meet schedule.
- Ability of CLASS to provide full stream of RDRs and ability to ingest stream of C-RDRs.
- Need to develop an automated re-request mechanism for CLASS.

